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FILE LAST UPDATED: 8 Sep 2004 (20040908/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s Garcinia
L1          760 GARCINIA

=> s l1 and citric acid
          73042 CITRIC
        3865395 ACID
          67665 CITRIC ACID
                (CITRIC(W)ACID)
L2           31 L1 AND CITRIC ACID

=> s l1 and hydroxycitric
           167 HYDROXYCITRIC
L3           85 L1 AND HYDROXYCITRIC

=> s l3 and salt
         719865 SALT
L4           26 L3 AND SALT

=> s l3 and salts
         561948 SALTS
```

10803986

L5 8 L3 AND SALTS

=> s l3 and extraction
127343 EXTRACTION
L6 5 L3 AND EXTRACTION

=> s hydroxycitric salts
167 HYDROXYCITRIC
561948 SALTS
L7 0 HYDROXYCITRIC SALTS
(HYDROXYCITRIC(W)SALTS)

=> s hydroxycitric
L8 167 HYDROXYCITRIC

=> s l8 and salt
719865 SALT
L9 42 L8 AND SALT

=> s l9 and Garcinia
760 GARCINIA
L10 26 L9 AND GARCINIA

=> d 1-26 bib abs l10

L10 ANSWER 1 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:542787 CAPLUS
TI Safety assessment of (-)-**hydroxycitric** acid and Super CitriMax a novel calcium/potassium **salt**
AU Soni, M. G.; Burdock, G. A.; Preuss, H. G.; Stohs, S. J.; Ohia, S. E.; Bagchi, D.
CS Burdock Group, Vero Beach, FL, 32962, USA
SO Food and Chemical Toxicology (2004), 42(9), 1513-1529
CODEN: FCTOD7; ISSN: 0278-6915
PB Elsevier Science B.V.
DT Journal
LA English
AB (-)-**Hydroxycitric** acid (HCA) is a principle constituent (10-30%) of the dried fruit rind of **Garcinia** cambogia, a plant native to Southeastern Asia. The dried rind has been used for centuries throughout Southeast Asia as a food preservative, flavoring agent and carminative. Extensive exptl. studies show that HCA inhibits fat synthesis and reduces food intake. The objective of this review is to systematically review the available safety/toxicity literature on HCA to determine its safety in-use. The primary mechanism of action of HCA appears to be related to its ability to act as a competitive inhibitor of the enzyme ATP-citrate lyase, which catalyzes the conversion of citrate and CoA to oxaloacetate and acetyl CoA (acetyl-CoA), primary building blocks of fatty acid and cholesterol synthesis. Super CitriMax, a novel calcium/potassium-HCA extract (HCA-SX), is considerably more soluble and bioavailable than calcium-based HCA ingredients. Acute oral toxicity studies in animals demonstrate that CitriMax (50% HCA as calcium **salt**) has a low acute oral toxicity. In a subchronic study in rats, the gavage administration of HCA-SX at doses up to 2500 mg/kg/day for a period of 90 days caused a significant decrease in body weight and reduction in feed consumption without any adverse effects. The structure, mechanism of action, long history of use of HCA and other toxicity studies indicate that HCA-SX is unlikely to cause reproductive or developmental effects. HCA-SX was not mutagenic in the presence or absence of metabolic activation in Ames genotoxicity assays in strains TA98 and TA102. HCA-SX-induced increases in number of revertants in other strains (TA100 and TA1535 in the absence of metabolic

activation and in strain TA1537 in the presence of metabolic activation) but these were not considered as biol. indicative of a mutagenic effect. In several, placebo-controlled, double-blind trials employing up to 2800 mg/day HCA, no treatment-related adverse effects were reported. There is sufficient qual. and quant. scientific evidence, including animal and human data suggesting that intake of HCA at levels up to 2800 mg/day is safe for human consumption.

RE.CNT 87 THERE ARE 87 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 2 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:425706 CAPLUS
DN 140:388725
TI An ion-exchange process for enriching **hydroxycitric** acid extracted from rinds of the **Garcinia** species for use in preparing food products
IN Bhandari, Ashok Kumar; Ravindranath, Bhagavathula; Moffett, Alex
PA Vittal Mallya Scientific Research Foundation, India; Rennaissance Herbs, Inc.
SO Indian, 17 pp.
CODEN: INXXAP
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI IN 178298	A	19970322	IN 1994-MA814	19940826
PRAI IN 1994-MA814		19940826		

AB A process of preparing **hydroxycitric** acid from **Garcinia** rind for use in preparing food products comprises: obtaining a **salt**-free water extract of the **Garcinia** species rind loading 100-125% of the extract into an anion-exchange column for adsorption of hydrocitric acid on to the anion exchanger; eluting the hydrocitric acid from the anion-exchange column with an alkali (e.g., sodium hydroxide) for release of the **hydroxycitric** acid as a Group IA metal **salt** solution; and loading 50-90% of this alkali- and anion-exchanger-treated solution into a cation-exchange column for collection of the **hydroxycitric** acid as a free acid solution

L10 ANSWER 3 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:350574 CAPLUS
DN 141:17433
TI Physico-chemical properties of a novel (-)-**hydroxycitric** acid extract and its effect on body weight, selected organ weights, hepatic lipid peroxidation and DNA fragmentation, hematology and clinical chemistry, and histopathological changes over a period of 90 days
AU Shara, Michael; Ohia, Sunny E.; Schmidt, Robert E.; Yasmin, Taharat; Zardetta-Smith, Andrea; Kincaid, Anthony; Bagchi, Manashi; Chatterjee, Archana; Bagchi, Debasis; Stohs, Sidney J.
CS School of Pharmacy and Health Professions, Department of Pharmacy Sciences, Creighton University Medical Center, Omaha, NE, USA
SO Molecular and Cellular Biochemistry (2004), 260(1&2), 171-186
CODEN: MCBIB8; ISSN: 0300-8177
PB Kluwer Academic Publishers
DT Journal
LA English
AB **Garcinia** cambogia-derived (-)-**hydroxycitric** acid (HCA) is a popular and natural supplement for weight management. HCA is a competitive inhibitor of the enzyme ATP citrate lyase, which catalyzes the conversion of citrate and CoA to oxaloacetate and acetyl CoA (acetyl CoA) in the cytosol. Acetyl CoA is used in the synthesis of fatty acids, cholesterol and triglycerides, and in the synthesis of acetylcholine in

the central nervous system. Studies have demonstrated the efficacy of a novel 60% calcium-potassium **salt** of HCA derived from **Garcinia** cambogia (HCA-SX, Super CitriMax) in weight management. Results have shown that HCA-SX promotes fat oxidation, enhances serotonin release and availability in the brain cortex, normalizes lipid profiles, and lowers serum leptin levels in obese subjects. Acute oral, acute dermal, primary dermal irritation and primary eye irritation toxicity, as well as Ames bacterial reverse mutation studies and mouse lymphoma tests have demonstrated the safety of HCA-SX. However, no detailed long-term safety of HCA-SX or any other HCA extract has been previously assessed. We evaluated the dose- and time-dependent effects of HCA-SX in Sprague-Dawley rats on body weight, selected organ wts., hepatic lipid peroxidn. and DNA fragmentation, hematol. and clin. chemical over a period of 90 days. Furthermore, a 90-day histopathol. evaluation was conducted. The animals were treated with 0, 0.2, 2.0 and 5.0% HCA-SX of feed intake and were sacrificed on 30, 60 or 90 days of treatment. The body weight and selected organ wts. were assessed and correlated as a % of body weight and brain weight at 90 days of treatment. A significant reduction in body weight was observed in treated rats as compared to control animals. An advancing age-induced marginal increase in hepatic lipid peroxidn. was observed in both male and female rats, while no such difference in hepatic DNA fragmentation was observed as compared to the control animals. Furthermore, selected organ wts. individually and as a % of body weight and brain weight at 90 days of treatment exhibited no significant difference between the groups. No difference was observed in hematol. and clin. chemical or the histopathol. evaluation. Taken together, these results show that 90 day treatment of HCA-SX results in a reduction in body weight, and does not cause any changes in major organs or in hematol., clin. chemical, and histopathol.

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 4 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:78695 CAPLUS
DN 140:264206
TI Efficacy of a novel, natural extract of (-)-**hydroxycitric** acid (HCA-SX) and a combination of HCA-SX, niacin-bound chromium and Gymnema sylvestre extract in weight management in human volunteers: a pilot study
AU Preuss, Harry G.; Bagchi, Debasis; Bagchi, Manashi; Rao, C. V. Sanyasi; Satyanarayana, S.; Dey, Dipak K.
CS Dept. of Physiology and Biophysics, Georgetown University Medical Center, Washington, DC, 20057, USA
SO Nutrition Research (New York, NY, United States) (2004), 24(1), 45-58
CODEN: NTRSDC; ISSN: 0271-5317
PB Elsevier Science Inc.
DT Journal
LA English
AB In this pilot study, the efficacy of a novel, natural extract of a highly bioavailable, calcium-potassium **salt** of (-)-**hydroxycitric** acid (HCA-SX) alone and in combination with a niacin-bound chromium (NBC) and Gymnema sylvestra extract (GSE) was evaluated for weight loss in moderately obese subjects by monitoring changes in body weight, body mass index (BMI), appetite, lipid profiles, serum leptin and serotonin levels, and enhanced excretion of urinary fat metabolites. **Garcinia** cambogia-derived (-)-**hydroxycitric** acid (HCA) has been shown to reduce appetite, inhibit fat synthesis and decrease body weight without stimulating the central nervous system. NBC has shown the ability to restore insulin function, metabolize fat, turn protein into muscle, and convert sugar into energy, which plays a role in appetite regulation and facilitates weight loss. Gymnema sylvestre is a traditional herb that helps to promote weight loss possibly through its ability to reduce cravings for sweets and control blood sugar levels. A randomized,

double-blind, placebo-controlled human clin. study was conducted in thirty obese subjects (ages 21-50, BMI>26 kg/m2) for eight weeks in Elluru, India. The subjects were randomly divided into three groups (10 subjects/group) and given HCA-SX 4,667 mg (60% HCA providing 2,800 mg HCA/day) (Group A), a combination of HCA-SX 4,667 mg, NBC 4 mg (providing 400 μg elemental Cr) and GSE 400 mg (providing 100 mg gymnemic acid) (Group B), or placebo (Group C) daily in 3 equally divided doses 30-60 min before each meal. This HCA-SX dose was extrapolated from previously conducted in vitro and in vivo studies. In addition, subjects received 2,000 kcal diet/day and underwent a 30 min/day supervised walking program, 5 days/wk. At the end of 8 wk, body weight and BMI decreased by 6.3%, resp., in Group A. Food intake was reduced by 4%. Total cholesterol, LDL and triglycerides levels were reduced by 6.3%, 12.3% and 8.6%, resp., while HDL and serotonin levels increased by 10.7% and 40%, resp. Serum leptin levels were decreased by 36.6%, and the enhanced excretion of urinary fat metabolites, including malondialdehyde (MDA), acetaldehyde (ACT), formaldehyde (FA) and acetone (ACON), increased by 125-258%. Under these same conditions, Group B reduced body weight and BMI by 7.8% and 7.9%, resp. Food intake was reduced by 14.1%. Total cholesterol, LDL and triglyceride levels were reduced by 9.1%, 17.9% and 18.1%, resp., while HDL and serotonin levels increased by 20.7% and 50%, resp. Serum leptin levels decreased by 40.5% and enhanced excretion of urinary fat metabolites increased by 146-281%. Group C reduced body weight and BMI by only 1.6% and 1.7%, resp., food intake was increased by 2.8%, and LDL, triglycerides and total cholesterol decreased by 0.8%, 0.2% and 0.8%, resp. HDL were reduced by 4.1% while serum leptin levels were increased by 0.3%, and excretion of urinary fat metabolites did not change in MDA, ACT and FA, and marginally increased in the case of ACON. No adverse effects were observed Results demonstrate that HCA-SX and, to a greater degree, the combination of HCA-SX, NBC and GSE can serve as safe weight management supplements.

RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 5 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:70251 CAPLUS
DN 140:99583
TI Novel process for the extraction of **hydroxycitric** acid from fruit rind of **Garcinia** species
IN Sharma, Nina; Parashuraman, Meena; Raman, Girija
PA Lupin Laboratories Limited, India
SO Indian, 20 pp.
CODEN: INXXAP
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI IN 181839	A	19981003	IN 1996-BO542	19961111
PRAI IN 1996-BO542		19961111		

AB A process is described for the extraction of calcium hydroxycitrate from the fruit rind of **Garcinia** cambogia, G. indica and G. atroviridis. An aqueous suspension of **Garcinia** rind was treated with a catalytic amount of polygalacturonase and pectin lyase at 30-50°. Sodium hydroxide was added to obtain an intermediate alkali metal **salt** of **hydroxycitric** acid and achieve a pH of 8-9. Calcium chloride was added to precipitate the corresponding calcium **salt**. The calcium **salt** of (-)-erythro-**hydroxycitric** acid is an active inhibitor of fat formation.

L10 ANSWER 6 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:874983 CAPLUS

10803986

DN 139:363934
TI **Hydroxycitric** acid **salt** composition for nutriceuticals
IN Bhaskaran, Sunil; Mehta, Sevanti
PA Unibar Corporation, USA
SO U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003207942	A1	20031106	US 2003-425428	20030429
	WO 2003092730	A1	20031113	WO 2003-US13173	20030429

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-376490P P 20020430

AB Disclosed is a **hydroxycitric** acid **salt** composition comprising calcium and potassium salts of **hydroxycitric** acid, preferably in a defined proportion which yields a very pure, stabilized preparation that is substantially tasteless for optimal use in a variety of foods items. The HCA salts are prepared by a process that includes treating an aqueous extract of **Garcinia** cambogia or **Garcinia** indica fruit with a liquid quaternizing agent such as a trialkylamine in which the alkyl groups are octyl, caprylyl, isooctyl, lauryl or decyl.

L10 ANSWER 7 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:871815 CAPLUS
DN 140:264420
TI Dose- and time-dependent effects of a novel (-)-**hydroxycitric** acid extract on body weight, hepatic and testicular lipid peroxidation, DNA fragmentation and histopathological data over a period of 90 days
AU Shara, Michael; Ohia, Sunney E.; Yasmin, Taharat; Zardetto-Smith, Andrea; Kincaid, Anthony; Bagchi, Manashi; Chatterjee, Archana; Bagchi, Debasis; Stohs, Sidney J.
CS School of Pharmacy and Health Professions, Department of Pharmacy Sciences, Creighton University Medical Center, Omaha, NE, 68178, USA
SO Molecular and Cellular Biochemistry (2003), 254(1&2), 339-346
CODEN: MCBIB8; ISSN: 0300-8177
PB Kluwer Academic Publishers
DT Journal
LA English
AB (-)-**Hydroxycitric** acid (HCA), a natural extract from the dried fruit rind of **Garcinia** cambogia (family Guttiferae), is a popular supplement for weight management. The dried fruit rind has been used for centuries as a condiment in Southeastern Asia to make food more filling and satisfying. A significant number of studies highlight the efficacy of Super CitriMax (HCA-SX, a novel 60% calcium-potassium **salt** of HCA derived from **Garcinia** cambogia) in weight management. These studies also demonstrate that HCA-SX promotes fat oxidation, inhibits ATP-citrate lyase (a building block for fat synthesis), and lowers the level of leptin in obese subjects. Acute oral, acute dermal, primary dermal irritation and primary eye irritation toxicity studies have demonstrated the safety of HCA-SX. However, no long-term

safety of HCA-SX or any other (-)-**hydroxycitric** acid extract has been previously assessed. In this study, we have evaluated the dose- and time-dependent effects of HCA-SX in Sprague-Dawley rats on body weight, hepatic and testicular lipid peroxidn., DNA fragmentation, liver and testis weight, expressed as such and as a % of body weight and brain weight, and histopathol. changes over a period of 90 days. The animals were treated with 0, 0.2, 2.0 and 5.0% HCA-SX as feed intake and the animals were sacrificed on 30, 60 or 90 days of treatment. The feed and water intake were assessed and correlated with the reduction in body weight HCA-SX supplementation demonstrated a reduction in body weight in both male and female rats over a period of 90 days as compared to the corresponding control animals. An advancing age-induced marginal increase in hepatic lipid peroxidn. was observed in both male and female rats as compared to the corresponding control animals. However, no such difference in hepatic DNA fragmentation and testicular lipid peroxidn. and DNA fragmentation was observed Furthermore, liver and testis weight, expressed as such and as a percentage of body weight and brain weight, at 30, 60 and 90 days of treatment, exhibited no significant difference between the four groups. Taken together, these results indicate that treatment of HCA-SX over a period of 90 days results in a reduction in body weight, but did not cause any changes in hepatic and testicular lipid peroxidn., DNA fragmentation, or histopathol. changes.

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 8 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:694006 CAPLUS
DN 140:93082
TI Effects of niacin-bound chromium, Maitake mushroom fraction SX and (-)-**hydroxycitric** acid on the metabolic syndrome in aged diabetic Zucker fatty rats
AU Talpur, Nadeem; Echard, Bobby W.; Yasmin, Taharat; Bagchi, Debasis; Preuss, Harry G.
CS Department of Physiology and Biophysics, Georgetown University Medical Center, Washington, DC, USA
SO Molecular and Cellular Biochemistry (2003), 252(1&2), 369-377
CODEN: MCBIB8; ISSN: 0300-8177
PB Kluwer Academic Publishers
DT Journal
LA English
AB Previous studies have demonstrated that niacin-bound chromium (NBC), Maitake mushroom, and (-)-**hydroxycitric** acid (HCA-SX) can ameliorate hypertension, dyslipidemia, and diabetes mellitus. They may be useful in body weight (BW) management. We used aged diabetic Zucker fatty rats (ZFR, 70-75 wk old) to determine whether NBC, fraction SX of Maitake mushroom (MSX), and 60% (-)-**hydroxycitric** acid (HCA-SX) from **Garcinia** cambogia, alone or in combination, can affect the metabolic syndrome X. The metabolic syndrome X is a concurrence of disturbed glucose and insulin metabolism, overweight, abdominal fat distribution, mild dyslipidemia, and hypertension, all of which are associated with subsequent development of type 2 diabetes mellitus and cardiovascular disease. Four groups of 8 ZFR were gavaged daily with the 3 different supplements. For the initial 3 wk, the control ZFR received only water, the second group received NBC with 40 μg elemental Cr/day, the third group MSX at 100 mg/day, and the fourth group HCA-SX at 200 mg/day. During weeks 4-6, the doses in each treatment were doubled. The control rats lost each .apprx.50 g BW over 6 wk of treatment, which is characteristic of these animals in declining health. The 8 ZFR receiving NBC lost each .apprx.9 g BW, while rats fed MSX lost each 16 g BW. ZFR fed HCA-SX simulated the pattern in the control group, as they lost each .apprx.46 g BW. The wide individual variations resulted in a lack of

statistical significance among the groups. Nevertheless, 75% ZFR in the control group lost >50 g BW over 6 wk, whereas none of the ZFR fed NBC, 25% ZFR fed MSX, and 57% ZFR fed HCA-SX lost >50 g BW over 6 wk. ZFR in all 3 treatment groups had lower blood pressures compared to controls and this effect seemed to be dose related. The general trend was for renal and liver blood parameters, hepatic and renal lipid peroxidn., and DNA fragmentation to improve due to the supplementation with these natural products. Combination treatment with the 3 supplements led to lower systolic blood pressure and maintenance of BW compared to controls. Elderly diabetics and even aging individuals might benefit from similar dietary regimen.

RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 9 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:425094 CAPLUS
DN 138:49726
TI Open field, physician controlled clinical evaluation of a botanical weight loss formula based on **Garcinia** cambogia derived (-) **hydroxycitric** acid
AU Badmaev, Vladimir; Majeed, Muhammed; Conte, Anthony A.
CS Sabinsa Corporation, Piscataway, NJ, 08854, USA
SO NutraCos (2002), 1(1), 10-14
CODEN: NUTRCP
PB B5 srl
DT Journal
LA English
AB OBJECTIVE: The purpose of this study was to evaluate the efficacy of (-)-**Hydroxycitric** acid (HCA) for body weight loss in overweight human subjects who received a (-)HCA formula consisting of 1500 mg of the Ca **salt** of HCA (750 mg of pure HCA) and 300 mcg of elemental Cr per day. (-)HCA derived from the rind of the **Garcinia** cambogia fruit competitively inhibits the cytosolic enzyme ATP citrate lyase in vitro and in vivo. This mechanism occurs in exptl. animals fed (-)HCA, and is likely responsible for their noticeably decreased feeding frequency, reduction in total body weight and body fat, and increase in energy expenditure. RESEARCH METHODS AND PROCEDURES: This open field, physician controlled 8 wk clin. study was evaluated (-)HCA formula in 55 overweight subjects of both genders with a body mass index of >25 and <45 kg/m2. RESULTS: Patients lost on average <5 lbs after 4 and <10 lbs. after 8 wk of regimen on the (-)HCA formula. Weight loss was independent of the gender or age of the population studied. The blood levels of triglycerides (TG), VLDL in the entire population and LDL in men over 60 yr of age were significantly lowered during course of treatment (TG mean value before treatment 167 vs. 155 mg/dL after 8 wk; VLDL 34 before vs. 29 mg/dL after; LDL 124 before vs. 116 mg/dL after), with the cholesterol levels unchanged. Blood levels of HDL were significantly increased for the entire population studied (mean value before treatment 47 4 vs. 50.4 mg/dL after). The 8 wk intake of the formula lowered the Coronary Heart Disease (CHD calculated as total cholesterol/HDL ratio) risk index significantly for the entire sample studied. The risk index decreased from a mean value of 0.99 (Cl: 0.87-1.13) to a mean of 0.90 (Cl: 0.76-1.04). No side effects of the regimen, subjective or objective, were reported.

L10 ANSWER 10 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:256003 CAPLUS
DN 136:262304
TI Processed meat products capable of potentiating motor endurance
IN Watanabe, Itaru; Oishi, Yasuyuki; Tomi, Hironori
PA Nippon Shinyaku Co., Ltd., Japan; Nippon Meat Packers, Inc.
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2

10803986

DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002026056	A1	20020404	WO 2001-JP8424	20010927
	W: AU, CN, JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	AU 2001092266	A5	20020408	AU 2001-92266	20010927
	US 2004013705	A1	20040122	US 2003-381539	20030325
PRAI	JP 2000-295934	A	20000928		
	JP 2001-201553	A	20010703		
	WO 2001-JP8424	W	20010927		

AB It is intended to provide novel processed meat products which can remarkably potentiate motor endurance and promote the metabolism of body fat. Processed meat products to which a **Garcinia** pericarp extract containing HCAs (**hydroxycitric** acid and derivs.) is added; utilization of the **Garcinia** pericarp extract for producing processed meat products for potentiating motor endurance or processed meat products for promoting body fat combustion which contain the **Garcinia** pericarp extract containing HCAs; a method of potentiating the motor endurance of humans or other animals by taking processed meat products which contain the **Garcinia** pericarp extract containing HCAs; and a method of thus promoting the body fat metabolism of the same were given.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 11 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:63786 CAPLUS
DN 134:120950
TI Weight control product comprising a synergistic mixture of guggulu extract, phosphate **salt** and metabolic stimulant
IN Brink, William Desisles
PA Natrol, Inc., USA
SO PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001005356	A2	20010125	WO 2000-US19597	20000714
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 2000062215	A5	20010205	AU 2000-62215	20000714
PRAI	US 1999-356688	A	19990720		
	WO 2000-US19597	W	20000714		

AB This invention relates to a weight control composition, preferably in the form of a capsule or tablet, comprising a mixture of guggulu extract, at least one phosphate **salt** selected from calcium phosphate, potassium phosphate and sodium phosphate and at least one metabolic stimulant. The composition evidences synergistic activity in reducing body weight and percent body fat in mammals. The guggulu extract/phosphate **salt**/metabolic

stimulant product also reduces plasma lipid levels and cholesterol in overweight hyperlipidemic humans. The inventive composition may also contain at least one addnl. component selected from phosphatidylcholine, **hydroxycitric** acid and L-tyrosine. Gelatin capsules were prepared containing phosphatidylcholine 12.5, dibasic calcium phosphate 125.0, dibasic potassium phosphate 75.0, monobasic sodium phosphate 37.5, dibasic sodium phosphate 37.5, guggulu gum extract (10% guggulsterones by weight) 125.0, **Garcinia** cambogia (50% **hydroxycitric** acid by weight) 125.0, and L-tyrosine 125.0 mg, resp.

L10 ANSWER 12 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:875764 CAPLUS
DN 134:28742
TI Soluble double metal **salt** of group IA and IIA of (-)-**hydroxycitric** acid, process of preparing the same and its use in beverages and other food products without effecting their flavor and properties
IN Balasubramanyam, Karanam; Chandrasekhar, Bhaskaran; Ramadoss, Candadai Seshadri; Rao, Pillarisetti Venkata Subba
PA Vittal Mallya Scientific Research Foundation, India
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6160172	A	20001212	US 1998-59354	19980414
	IN 182487	A	19990417	IN 1997-MA1880	19970827
	IN 182488	A	19990417	IN 1997-MA1881	19970827
	IN 182489	A	19990417	IN 1997-MA1985	19970908
	IN 182490	A	19990417	IN 1997-MA1986	19970908
	IN 182810	A	19990724	IN 1997-MA1987	19970908
	IN 183849	A	20000429	IN 1998-MA2416	19981028
	US 6395296	B1	20020528	US 2000-637085	20000811
PRAI	IN 1997-MA1880	A	19970827		
	IN 1997-MA1881	A	19970827		
	IN 1997-MA1985	A	19970908		
	IN 1997-MA1986	A	19970908		
	IN 1997-MA1987	A	19970908		
	US 1998-59354	A3	19980414		

AB The present invention is directed to a new soluble double metal **salt** of group IA and IIA of (-)-**hydroxycitric** acid of general formula I: where X is IA group metal: Li or Na or K or Rb or Cs or Fr where Y is IIA group metal: Be or Mg or Ca or Sr or Ba or Ra where the concentration of X in the **salt** varies from 1.5-51.0%, the concentration of Y in the salts varies from 2.0-50.9%, the concentration of HCA in the **salt** varies from 31.0-93.0% depending on the nature of X and Y. This invention more particularly relates to new soluble double metal **salt** of group IA and IIA of (-)-**hydroxycitric** acid of general formula II. This invention also includes a process of preparing the soluble double metal **salt** of group IA and IIA of (-)-**hydroxycitric** acid of general formula I comprising: preparing (-)-**hydroxycitric** acid liquid concentrate/solid lactone of hyroxycitric acid from **Garcinia** extract, neutralizing the free (-)-**hydroxycitric** acid present in the said (-)-**hydroxycitric** acid liquid concentrate/solid lactone (-)-**hydroxycitric** acid with group IA metal hydroxides, displacing partially the group IA metal ions in the above **salt** solns. by adding group IIA metal chlorides to form soluble double metal **salt** of group IA and IIA of (-)-**hydroxycitric** acid, precipitating the said double metal **salt** of group IA & IIA of (-)-**hydroxycitric**

acid by adding aqueous polar solvent to get soluble IIA metal **salt** of (-)-**hydroxycitric** acid or obtaining the soluble double metal **salt** as powder by spray drying prior to the solvent addition or spray drying water solubilized solvent precipitated material. The instant invention also discloses the use of the said soluble double metal **salt** of group IA and IIA of (-)-**hydroxycitric** acid of formula I and particularly formula II in beverages and other food products and its use in beverages and other food products.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 13 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:592686 CAPLUS
DN 133:176525
TI Soluble double metal **salt** of group IA and IIA of (-) **hydroxycitric** acid for food products
IN Subbarao, Pillarisetti Venkata; Balasubramanyam, Karnam; Chandrashekar, Bhaskaran; Ramadoss, Candadai Seshadri
PA India
SO PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000048983	A1	20000824	WO 1999-IN4	19990218
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9928517	A1	20000904	AU 1999-28517	19990218
EP 1154978	A1	20011121	EP 1999-909175	19990218
R: BE, CH, DE, DK, FR, GB, IT, LI, NL, SE, FI				
JP 2002542152	T2	20021210	JP 2000-599724	19990218
PRAI WO 1999-IN4	A	19990218		

AB This invention relates to a new soluble double **salt** of group IA and group IIA of (-)**hydroxycitric** acid. This invention also includes a process of preparing the soluble double metal **salt** of groups IA and IIA of (-)hyroxycitric acid comprising preparing (-)hyroxycitric acid liquid concentrate/solid lactone thereof from **Garcinia** extract, neutralizing the free (-)**hydroxycitric** acid present in the said (-)**hydroxycitric** acid liquid concentrate/solid lactone (-)**hydroxycitric** acid with group IA metal hydroxides, displacing partially the group IA metal ions in the above **salt** solns. by adding group IIA metal chlorides to form soluble double metal **salt** of group IA and IIA of (-)**hydroxycitric** acid, and precipitating the said double metal **salt**. The instant invention also disclosed the use of the said soluble double metal **salt** of (-)hyroxycitric acid in beverages and other food products.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 14 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:290579 CAPLUS
DN 132:298859
TI Compositions comprising guggulu extract and phosphate salts
IN Brink, William Desisles
PA Prolab Nutrition, Inc., USA

10803986

SO Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 997149	A1	20000503	EP 1999-308490	19991027
	EP 997149	B1	20020320		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 6113949	A	20000905	US 1998-179328	19981027
	GB 2343115	A1	20000503	GB 1999-7037	19990329
	AT 214613	E	20020415	AT 1999-308490	19991027
PRAI	US 1998-179328	A	19981027		

AB A weight-control composition, preferably in the form of a capsule or tablet, comprises a mixture of guggulu extract and at least one phosphate **salt** selected from Ca phosphate, K phosphate, and Na phosphate. The composition evidences a synergistic activity in reducing body weight and body fat in mammals. The guggulu extract/phosphate **salt** product also reduces plasma lipid levels and cholesterol in overwt. hyperlipidemic humans and enhances vigor and mood states. The inventive composition may also contain at least one addnl. component selected from phosphatidylcholine, **hydroxycitric** acid, and L-tyrosine. A capsule contained phosphatidylcholine 12.5, CaHPO4 125, K2HPO4 75, NaH2PO4 37.5, Na2HPO4 37.5, Guggulu extract (10 % guggulsterone) 125, **Garcinia** cambogia (50 % **hydroxycitric** acid) 125, and L-tyrosine 125 mg.

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 15 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:278402 CAPLUS
DN 133:109728
TI Separation of **hydroxycitric** acid lactone from fruit pectins and polyhydroxyphenols on poly(4-vinylpyridine) weak-base resin
AU Chanda, M.; Rempel, G. L.
CS Department of Chemical Engineering, University of Waterloo, Waterloo, ON, N2L 3G1, Can.
SO Separation Science and Technology (2000), 35(6), 883-902
CODEN: SSTEDS; ISSN: 0149-6395
PB Marcel Dekker, Inc.
DT Journal
LA English
AB Poly(4-vinylpyridine) (PVP) has been used for the separation of **hydroxycitric** acid lactone (HCAL) from polyhydroxyphenols and fruit pectins, as the study has relevance to the problem of extraction of the antiobesity substance **hydroxycitric** acid from **Garcinia** cambogia fruits, a rich source of the acid. PVP has been used both in free-base form and in protonated or **salt** form as a sorbent, while catechol and pyrogallol have been used as representative polyhydroxyphenols. Though the protonated form, used as PVP(HCl), has a low sorption capacity (96 mg/g dry resin) and low selectivity for pectin (at pH 8), its higher, but comparable, sorptions (at pH 8) of HCAL, catechol, and pyrogallol, with resp. saturation values of 354, 349, and 366 mg/g dry resin, coupled with high selectivity for the hydroxyphenols, make the sorbent unsuitable for the desired separation of HCAL. On the other hand, PVP free-base resin has significantly high sorption of HCAL as compared to catechol and pyrogallol in mildly acidic media (pH 1.8-2.8), the resp. saturation values being 576, 206, and 303 mg/g dry resin, but the free-base resin also shows high saturation capacity (500 mg/g dry resin) for pectin. However, at low substrate concns. (<1 g/L) or relatively low pH (<2), pectin has an order of magnitude lower sorption than HCAL, making separation of

the latter possible on PVP free-base resin. Column operation using PVP free-base resin with influent maintained at pH 1.8, followed by stripping with less than the theor. amount of alkali, produces good separation and high yield of HCAL from the mixed influent. Reillex HP, a macroporous PVP resin, used in free-base form, has relatively fast kinetics for HCAL sorption, with a t1/2 value of about 5 min and diffusivity of the order of 10-6 cm2/s.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 16 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:190874 CAPLUS
DN 132:227426
TI **Hydroxycitric** acid compositions for lipogenesis inhibitors and appetite suppressants
IN Gokaraju, Ganga Raju
PA Interhealth Nutraceuticals, Inc., USA
SO PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000015051	A1	20000323	WO 1999-US21099	19990914
	W: CA, IN, JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
PRAI	US 1998-151806		19980914		

AB Partial calcium salts of **hydroxycitric** acid are prepared as lipogenesis inhibitors and appetite suppressants; the preparation is potassium-free and obtained from an extract of **Garcinia** fruit. The composition is highly water soluble, has minimal hygroscopicity, and has favorable flavor and aesthetic properties. Thus, **hydroxycitric** acid is obtained from **Garcinia** rind by alc./acetone extraction, and after clean up and concentration calcium hydroxycitrate is formed by adding calcium hydroxide; conversion to the partial calcium **salt** of **hydroxycitric** acid is achieved by using sulfuric acid.

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 17 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:81564 CAPLUS
DN 130:144169
TI **Hydroxycitric** acid compositions, pharmaceutical and dietary supplements and food products made therefrom, and methods for their use in reducing body weight
IN Raju, G. Ganga
PA Interhealth Nutraceuticals Incorporated, USA
SO PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9903464	A1	19990128	WO 1998-US14481	19980713
	W: JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1011660	A1	20000628	EP 1998-935633	19980713

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI

	JP 2001527022	T2	20011225	JP 2000-502764	19980713
PRAI	US 1997-892414	A	19970714		
	WO 1998-US14481	W	19980713		

AB **Hydroxycitric** acid (I) compns. which comprise approx. 14 to 26 % by weight of calcium, and approx. 24 to 40 % by weight of potassium or approx. 14 to 24 % by weight of sodium, or a mixture thereof, each calculated as a percentage of the total **hydroxycitric** acid content of the composition, together with dietary supplements and food products containing such compns. and methods for utilizing such compns., dietary supplements and food products to reduce body weight in mammals are disclosed. Exts. from **Garcinia** fruits reacted with calcium hydroxide to obtain calcium hydroxycitrate which was reacted with phosphoric acid to convert the calcium hydroxycitrate to I (yield 91.6%). I was reacted with calcium hydroxide to obtain calcium **salt** of I.

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 18 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:631428 CAPLUS
DN 129:265459
TI Process for producing calcium **salt** of (-)-erythrohydroxycitric acid
IN Sharma, Nina; Parashuraman, Meena; Raman, Girija
PA Lupin Laboratories Ltd., India
SO Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 866137	A1	19980923	EP 1997-301777	19970317
EP 866137	B1	20030115		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI

PRAI	EP 1997-301777	19970317

AB A process for extraction of **hydroxycitric** acid as calcium **salt** from the fruit rind of **Garcinia** species such as **Garcinia** cambogia, **Garcinia** indica and **Garcinia** atroviridis, which comprises reaction of an aqueous suspension of **Garcinia** rind with a mixture of pectic enzymes such as polygalacturonase (PG) and pectin lyase (PL), at a temperature of 40° followed by addition of an alkali such as sodium hydroxide and, from the intermediate alkali metal **salt** of **hydroxycitric** acid the corresponding calcium **salt** is prepared by addition of calcium chloride. The calcium **salt** of (-)-**hydroxycitric** acid is therapeutically active component.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 19 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:564287 CAPLUS
DN 129:188716
TI Athletic endurance increasing agent in food
IN Fushiki, Tohru; Ishihara, Kengo; Anno, Takahiko; Tomi, Hironori
PA Nippon Shinyaku Co., Ltd., Japan
SO PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DT Patent

10803986

LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9835664	A1	19980820	WO 1998-JP533	19980209
	W: CA, CN, JP, KR, RU, US, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 974349	A1	20000126	EP 1998-901566	19980209
	R: BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
PRAI	JP 1997-28914		19970213		
	WO 1998-JP533		19980209		

AB A new use of a **hydroxycitric** acid and derivs. thereof; and a new method of utilizing a **Garcinia** pericarp extract containing any of the **hydroxycitric** acid and derivs. were given. The athletic endurance reinforcing agent is characterized by containing as the active ingredient (-)-**hydroxycitric** acid, its lactone, or a **salt** of either.

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 20 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:611 CAPLUS
DN 128:127458
TI Effects of liquid **Garcinia** extract and soluble **Garcinia** powder on body weight change - a possible material for suppressing fat accumulation
AU Sawada, Harumichi; Tomi, Hironori; Tamura, Koichi; Anno, Takahiko
CS Food Res. Lab., Nippon Shinyaku Co., Ltd., Kyoto, 601, Japan
SO Nihon Yukagakkaishi (1997), 46(12), 1467-1474
CODEN: NIYUFC; ISSN: 1341-8327
PB Nihon Yukagaku Gakkai
DT Journal
LA Japanese
AB **Garcinia** is a spice which has been found effective for reducing body weight There are many products containing **garcinia** extract as calcium type powder, with the active principle (-)-**hydroxycitric** acid (HCA) presumably present as calcium **salt**. The calcium type powder is stable but not ideal for food products due to its insoly. in water. A soluble **garcinia** extract should thus be produced having the lactone form of HCA. This form does not inhibit ATP-citrate lyase in vitro, which is a key enzyme in lipid synthesis. A soluble **garcinia** extract containing much HCA in the lactone form would be of little use for reducing body weight Because the lactone form of HCA was found to be possibly active in vivo, the authors prepared soluble **garcinia** powder and liquid **garcinia** extract containing much lactone form of HCA, and assessment of usefulness was made by examining effects on weight change in rats and humans by comparison with calcium type **garcinia** powder. Soluble **garcinia** powder was found more effective for weight reduction than the calcium type **garcinia** powder in rats when administered in feed. Soluble **garcinia** powder and liquid **garcinia** extract should be effective to reduce human body weight by acting to decrease fat accumulation.

L10 ANSWER 21 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:41983 CAPLUS
DN 126:65382
TI A new process for the production of potassium hydroxy citric acid, and compositions containing the potassium hydroxy citric acid
IN Majeed, Muhammed; Badmaev, Vladimir; Rajendran, R.
PA Sabinsa Corporation, USA; Majeed, Muhammed; Badmaev, Vladimir; Rajendran, R.
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2

10803986

DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9636585	A1	19961121	WO 1996-US6554	19960515
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN				
	AU 9657360	A1	19961129	AU 1996-57360	19960515
	US 5783603	A	19980721	US 1997-829143	19970331
	US 6770782	B1	20040803	US 1998-83122	19980522
PRAI	US 1995-440968	A	19950515		
	WO 1996-US6554	W	19960515		
	US 1997-829143	A3	19970331		

AB The present invention provides new processes for the synthesis or isolation of **hydroxycitric** acid in the form of a potassium **salt** from **Garcinia** fruit. The present invention also provides compns. containing the potassium hydroxy citrate for use a s appetite suppressants.

L10 ANSWER 22 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:43524 CAPLUS
DN 124:97375
TI (-)-**Hydroxycitric** acid from **Garcinia** cambogia.
AU Singh, R.P.; Jayaprakasha, G.K.; Sakariah, K.K.
CS Manpower Development, Central Food Technological Research Institute, Mysore, 570 013, India
SO Biological Memoirs (1995), 21(1), 27-33
CODEN: BMEMDK; ISSN: 0379-8097
PB Dr. A.R. Chowdhury
DT Journal
LA English
AB Crystals of (-)-**hydroxycitric** acid were prepared from water extract of G. cambogia by precipitation as calcium or barium **salt** and desalting on cation exchange resin. Water was removed by distillation with immiscible solvent, followed by recrystn. of (-)-**hydroxycitric** acid lactone in ether. Purity of the preparation was confirmed by spectroscopic and chemical studies.

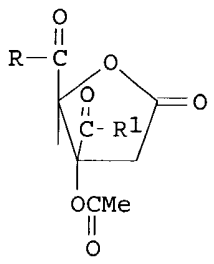
L10 ANSWER 23 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1977:517767 CAPLUS
DN 87:117767
TI **Hydroxycitric** acid derivatives
IN Guthrie, Robert William; Kierstead, Richard Wightman
PA Hoffmann-La Roche, Inc., USA
SO U.S., 9 pp. Division of U.S. 3,919,254.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4028397	A	19770607	US 1975-600995	19750801
	US 3767678	A	19731023	US 1971-204288	19711202
	US 3919254	A	19751111	US 1973-376478	19730705
	AT 7501597	A	19750915	AT 1975-1597	19750228
	AT 330140	B	19760610		

10803986

PRAI US 1971-204288 19711202
US 1973-376478 19730705
AT 1972-10240 19721201

GI



I, R=R2, R1=R3

II, R=R3, R1=R2

AB The title amides and esters I (R2 = MeO, EtO, PhCH2O, R3 = NH2, EtNH, Et2N, 1-adamantylamino, Oh) and II (R2 = OH, MeO, EtO, R3 = EtNH, Et2H, 4-HO2CC6H4NH) were prepared and showed an inhibiting effect in fatty acid synthesis. Thus, 28.0 g (+)-threo-**hydroxycitric** acid γ-lactone was treated with Ac2O to give 26.1 g 2(S),3(S)-tetrahydro-3-acetoxy-5-oxo-2,3-furandicarboxylic anhydride. This anhydride (9.8 g) was treated with 16.8 g 1-adamantanamine in THF to give 17.7 g I (R2 = 1-adamantylamino, R3 = OH). This amide (1.0 g) and (COCl)2 gave 0.575 g of Et 3(S),4(S)-4-[N-(1-adamantylcarbamoyl)]-3-ethoxycarbonyl-3,4-dihydroxybutanoate (III).

L10 ANSWER 24 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1971:492246 CAPLUS
DN 75:92246
TI Structure and absolute configuration of the calcium **salt** of **garcinia** acid, the lactone of (-)-**hydroxycitric** acid
AU Glusker, Jenny P.; Minkin, Jean A.; Casciato, Carol A.
CS Inst. Cancer Res., Philadelphia, PA, USA
SO Acta Crystallographica, Section B: Structural Crystallography and Crystal Chemistry (1971), 27(Pt. 7), 1284-93
CODEN: ACBCAR; ISSN: 0567-7408
DT Journal
LA English
AB The Ca **salt** of the lactone of (-)-**hydroxycitric** acid crystallizes in the orthorhombic system as a tetrahydrate. Unit-cell dimensions are a = 8.680, b = 17.299, c = 7.135 Å. The space group is P21212 with four units of Ca(C6O7H4).4H2O per cell. The structure was solved by heavy atom techniques and was refined by the full-matrix least-squares method to an R value of 0.050 by using 1371 reflections, 97 of which were below the threshold of measurement. All hydrogen atoms were found from a difference map and their parameters were refined. The absolute configuration of the free (-)-**hydroxycitric** acid, determined from anomalous dispersion measurements on the lactone **salt**, is (1S,2S)1,2-dihydroxy-1,2,3-propanetricarboxylic acid. The 2 carboxyl groups are cis with respect to the plane of the lactone ring and the 2 >C(CO2-)O- groupings are each almost planar. The lactone forms a bidentate chelate with Ca2+. The ion is surrounded by eight oxygen atoms in a square antiprism arrangement, with Ca-O distances of 2.39-2.52 Å, and with one face of the coordination polyhedron shared with that of another calcium ion.

L10 ANSWER 25 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1970:89707 CAPLUS
DN 72:89707

10803986

Bhaskaran; Ramadoss, Candadai Seshadri
PA India
SO PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000048983	A1	20000824	WO 1999-IN4	19990218
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9928517	A1	20000904	AU 1999-28517	19990218
	EP 1154978	A1	20011121	EP 1999-909175	19990218
	R: BE, CH, DE, DK, FR, GB, IT, LI, NL, SE, FI				
	JP 2002542152	T2	20021210	JP 2000-599724	19990218
PRAI	WO 1999-IN4	A	19990218		

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s obesity
L12 27961 OBESITY

=> s l12 and hydroxycitric
167 HYDROXYCITRIC
L13 33 L12 AND HYDROXYCITRIC

=> s l33 and salts
L33 NOT FOUND
The L-number entered could not be found. To see the definition of L-numbers, enter DISPLAY HISTORY at an arrow prompt (=>).

=> s l13 and salts
561948 SALTS
L14 3 L13 AND SALTS

=> s l13 and salt
719865 SALT
L15 8 L13 AND SALT

=> s l13 and salt(s)
MISSING TERM AFTER SALT(S
Operators must be followed by a search term, L-number, or query name.

=> s l14 or l15
L16 9 L14 OR L15

=> d 1-9 bib abs l16

L16 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:609740 CAPLUS
DN 141:162091
TI Topical nutraceutical compositions with selective body slimming and tone firming antiaging benefits
IN Gupta, Shyam K.
PA USA

10803986

SO U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004146539	A1	20040729	US 2003-248508	20030124
PRAI	US 2003-248508		20030124		

AB Cosmetic or topical pharmaceutical compns. are described for external body part or organ slimming, firming, cellulite reduction, fat-reduction, and **obesity** control benefits that are in synergistic combination with benefits for the treatment of skin aging, skin wrinkles reduction, skin exfoliating, treatment of acne, treatment of rosacea, age-spots reduction, skin surface whitening, skin surface brightening striae distensae (stretch marks) reduction, treatment of pimples, treatment of skin infections and lesions, spider veins reduction, blood microcirculation (venous insufficiency) improvement, UVA/UVB protection of skin, and skin redness reduction These compns. thus provide multiple combinations of skin and external body part or organ enhancement benefits that can be selective and specific for external body parts and organs such as face, chin, cheeks, arms, "love handles" in abdomen area, eye lids and eye zone, neck, breasts, thighs, and hips. For example, a chitosan facial mask composition for the reduction of wrinkles and excess fat on cheeks and eyelids contained chitosan 5%, lactic acid 5%, glycerin 18%, water 65.8%, **hydroxycitric** acid 5%, niacinamide 0.5%, glutathione 0.2%, and preservatives 0.5%. First three components were mixed into a paste, other components were mixed sep. into a clear solution, and the paste and the solution were combined to obtain a clear gel product. The gel is applied on the face and neck and left for 10 to 30 min, then rinsed off.

L16 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:350574 CAPLUS
DN 141:17433
TI Physico-chemical properties of a novel (-)-**hydroxycitric** acid extract and its effect on body weight, selected organ weights, hepatic lipid peroxidation and DNA fragmentation, hematology and clinical chemistry, and histopathological changes over a period of 90 days
AU Shara, Michael; Ohia, Sunny E.; Schmidt, Robert E.; Yasmin, Taharat; Zardetta-Smith, Andrea; Kincaid, Anthony; Bagchi, Manashi; Chatterjee, Archana; Bagchi, Debasis; Stohs, Sidney J.
CS School of Pharmacy and Health Professions, Department of Pharmacy Sciences, Creighton University Medical Center, Omaha, NE, USA
SO Molecular and Cellular Biochemistry (2004), 260(1&2), 171-186
CODEN: MCBIB8; ISSN: 0300-8177
PB Kluwer Academic Publishers
DT Journal
LA English
AB Garcinia cambogia-derived (-)-**hydroxycitric** acid (HCA) is a popular and natural supplement for weight management. HCA is a competitive inhibitor of the enzyme ATP citrate lyase, which catalyzes the conversion of citrate and CoA to oxaloacetate and acetyl CoA (acetyl CoA) in the cytosol. Acetyl CoA is used in the synthesis of fatty acids, cholesterol and triglycerides, and in the synthesis of acetylcholine in the central nervous system. Studies have demonstrated the efficacy of a novel 60% calcium-potassium **salt** of HCA derived from Garcinia cambogia (HCA-SX, Super CitriMax) in weight management. Results have shown that HCA-SX promotes fat oxidation, enhances serotonin release and availability in the brain cortex, normalizes lipid profiles, and lowers serum leptin levels in obese subjects. Acute oral, acute dermal, primary dermal irritation and primary eye irritation toxicity, as well as Ames bacterial reverse mutation studies and mouse lymphoma tests have demonstrated the

safety of HCA-SX. However, no detailed long-term safety of HCA-SX or any other HCA extract has been previously assessed. We evaluated the dose- and time-dependent effects of HCA-SX in Sprague-Dawley rats on body weight, selected organ wts., hepatic lipid peroxidn. and DNA fragmentation, hematol. and clin. chemical over a period of 90 days. Furthermore, a 90-day histopathol. evaluation was conducted. The animals were treated with 0, 0.2, 2.0 and 5.0% HCA-SX of feed intake and were sacrificed on 30, 60 or 90 days of treatment. The body weight and selected organ wts. were assessed and correlated as a % of body weight and brain weight at 90 days of treatment. A significant reduction in body weight was observed in treated rats as compared to control animals. An advancing age-induced marginal increase in hepatic lipid peroxidn. was observed in both male and female rats, while no such difference in hepatic DNA fragmentation was observed as compared to the control animals. Furthermore, selected organ wts. individually and as a % of body weight and brain weight at 90 days of treatment exhibited no significant difference between the groups. No difference was observed in hematol. and clin. chemical or the histopathol. evaluation. Taken together, these results show that 90 day treatment of HCA-SX results in a reduction in body weight, and does not cause any changes in major organs or in hematol., clin. chemical, and histopathol.

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:78695 CAPLUS
DN 140:264206
TI Efficacy of a novel, natural extract of (-)-**hydroxycitric** acid (HCA-SX) and a combination of HCA-SX, niacin-bound chromium and Gymnema sylvestre extract in weight management in human volunteers: a pilot study
AU Preuss, Harry G.; Bagchi, Debasis; Bagchi, Manashi; Rao, C. V. Sanyasi; Satyanarayana, S.; Dey, Dipak K.
CS Dept. of Physiology and Biophysics, Georgetown University Medical Center, Washington, DC, 20057, USA
SO Nutrition Research (New York, NY, United States) (2004), 24(1), 45-58
CODEN: NTRSDC; ISSN: 0271-5317
PB Elsevier Science Inc.
DT Journal
LA English
AB In this pilot study, the efficacy of a novel, natural extract of a highly bioavailable, calcium-potassium **salt** of (-)-**hydroxycitric** acid (HCA-SX) alone and in combination with a niacin-bound chromium (NBC) and Gymnema sylvestra extract (GSE) was evaluated for weight loss in moderately obese subjects by monitoring changes in body weight, body mass index (BMI), appetite, lipid profiles, serum leptin and serotonin levels, and enhanced excretion of urinary fat metabolites. Garcinia cambogia-derived (-)-**hydroxycitric** acid (HCA) has been shown to reduce appetite, inhibit fat synthesis and decrease body weight without stimulating the central nervous system. NBC has shown the ability to restore insulin function, metabolize fat, turn protein into muscle, and convert sugar into energy, which plays a role in appetite regulation and facilitates weight loss. Gymnema sylvestre is a traditional herb that helps to promote weight loss possibly through its ability to reduce cravings for sweets and control blood sugar levels. A randomized, double-blind, placebo-controlled human clin. study was conducted in thirty obese subjects (ages 21-50, BMI>26 kg/m2) for eight weeks in Elluru, India. The subjects were randomly divided into three groups (10 subjects/group) and given HCA-SX 4,667 mg (60% HCA providing 2,800 mg HCA/day) (Group A), a combination of HCA-SX 4,667 mg, NBC 4 mg (providing 400 μg elemental Cr) and GSE 400 mg (providing 100 mg gymnemic acid) (Group B), or placebo (Group C) daily in 3 equally divided doses 30-60 min before each meal.

This HCA-SX dose was extrapolated from previously conducted in vitro and in vivo studies. In addition, subjects received 2,000 kcal diet/day and underwent a 30 min/day supervised walking program, 5 days/wk. At the end of 8 wk, body weight and BMI decreased by 6.3%, resp., in Group A. Food intake was reduced by 4%. Total cholesterol, LDL and triglycerides levels were reduced by 6.3%, 12.3% and 8.6%, resp., while HDL and serotonin levels increased by 10.7% and 40%, resp. Serum leptin levels were decreased by 36.6%, and the enhanced excretion of urinary fat metabolites, including malondialdehyde (MDA), acetaldehyde (ACT), formaldehyde (FA) and acetone (ACON), increased by 125-258%. Under these same conditions, Group B reduced body weight and BMI by 7.8% and 7.9%, resp. Food intake was reduced by 14.1%. Total cholesterol, LDL and triglyceride levels were reduced by 9.1%, 17.9% and 18.1%, resp., while HDL and serotonin levels increased by 20.7% and 50%, resp. Serum leptin levels decreased by 40.5% and enhanced excretion of urinary fat metabolites increased by 146-281%. Group C reduced body weight and BMI by only 1.6% and 1.7%, resp., food intake was increased by 2.8%, and LDL, triglycerides and total cholesterol decreased by 0.8%, 0.2% and 0.8%, resp. HDL were reduced by 4.1% while serum leptin levels were increased by 0.3%, and excretion of urinary fat metabolites did not change in MDA, ACT and FA, and marginally increased in the case of ACON. No adverse effects were observed Results demonstrate that HCA-SX and, to a greater degree, the combination of HCA-SX, NBC and GSE can serve as safe weight management supplements.

RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:70251 CAPLUS
DN 140:99583
TI Novel process for the extraction of **hydroxycitric** acid from fruit rind of Garcinia species
IN Sharma, Nina; Parashuraman, Meena; Raman, Girija
PA Lupin Laboratories Limited, India
SO Indian, 20 pp.
CODEN: INXXAP
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI IN 181839	A	19981003	IN 1996-BO542	19961111
PRAI IN 1996-BO542		19961111		

AB A process is described for the extraction of calcium hydroxycitrate from the fruit rind of Garcinia cambogia, G. indica and G. atroviridis. An aqueous suspension of Garcinia rind was treated with a catalytic amount of polygalacturonase and pectin lyase at 30-50°. Sodium hydroxide was added to obtain an intermediate alkali metal **salt** of **hydroxycitric** acid and achieve a pH of 8-9. Calcium chloride was added to precipitate the corresponding calcium **salt**. The calcium **salt** of (-)-erythro-**hydroxycitric** acid is an active inhibitor of fat formation.

L16 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:889205 CAPLUS
DN 137:346251
TI (-)-**Hydroxycitric** acid for wound healing and immunomodulation
IN Clouatre, Dallas L.; Dunn, James M.
PA USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English

10803986

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6482858	B1	20021119	US 2001-886572	20010620
PRAI	US 2001-886572		20010620		

AB (-)-**Hydroxycitric** acid (HCA) supplementation improves wound healing and immunomodulation/immunoregulation, including improving depressed immune function and also reducing excessive immune activity such as is found in elevated humoral immunity linked to allergies and autoimmune diseases. The benefits of HCA are especially pronounced with the use of the preferred **salt** of the acid, potassium hydroxycitrate, and may be further potentiated by the use of a controlled-release form of the compound

RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:845565 CAPLUS
DN 137:333156
TI Correcting polymorphic metabolic dysfunction with (-)-**hydroxycitric** acid
IN Clouatre, Dallas L.; Dunn, James M.
PA USA
SO U.S., 16 pp.
CODEN: USXXAM
DT Patent
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6476071	B1	20021105	US 2001-850280	20010507
	US 2002193430	A1	20021219		
PRAI	US 2001-850280		20010507		

AB A method is provided whereby in an individual showing evidence of dysregulation of elements of the polymorphic metabolic dysfunction (PMD), which is defined as the dysregulation of the metabolism of insulin, glucocorticoids, leptin, resistin, and peroxisome proliferator-activated receptor γ (PPARγ), this regulation is improved when that person receives an appropriate administration of (-)-**hydroxycitric** acid. The potassium **salt** of (-)-**hydroxycitric** acid is a preferred form of the compound, followed by the sodium **salt**, then by the amide and other **salt** forms and derivs. of the acid. The regulation of PMD over any given period may be improved with a controlled-release form of (-)-**hydroxycitric** acid. Controlled release can be used to provide a sustained and modulated amount of the active ingredient to the body as desired and therefore to regulate the use of the compound as PMD regulative agent.

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:425094 CAPLUS
DN 138:49726
TI Open field, physician controlled clinical evaluation of a botanical weight loss formula based on Garcinia cambogia derived (-)**hydroxycitric** acid
AU Badmaev, Vladimir; Majeed, Muhammed; Conte, Anthony A.
CS Sabinsa Corporation, Piscataway, NJ, 08854, USA
SO NutraCos (2002), 1(1), 10-14
CODEN: NUTRCP
PB B5 srl

10803986

DT Journal
LA English
AB OBJECTIVE: The purpose of this study was to evaluate the efficacy of (-)-**Hydroxycitric** acid (HCA) for body weight loss in overweight human subjects who received a (-)HCA formula consisting of 1500 mg of the Ca **salt** of HCA (750 mg of pure HCA) and 300 mcg of elemental Cr per day. (-)HCA derived from the rind of the Garcinia cambogia fruit competitively inhibits the cytosolic enzyme ATP citrate lyase in vitro and in vivo. This mechanism occurs in exptl. animals fed (-)HCA, and is likely responsible for their noticeably decreased feeding frequency, reduction in total body weight and body fat, and increase in energy expenditure. RESEARCH METHODS AND PROCEDURES: This open field, physician controlled 8 wk clin. study was evaluated (-)HCA formula in 55 overweight subjects of both genders with a body mass index of >25 and <45 kg/m2. RESULTS: Patients lost on average <5 lbs after 4 and <10 lbs. after 8 wk of regimen on the (-)HCA formula. Weight loss was independent of the gender or age of the population studied. The blood levels of triglycerides (TG), VLDL in the entire population and LDL in men over 60 yr of age were significantly lowered during course of treatment (TG mean value before treatment 167 vs. 155 mg/dL after 8 wk; VLDL 34 before vs. 29 mg/dL after; LDL 124 before vs. 116 mg/dL after), with the cholesterol levels unchanged. Blood levels of HDL were significantly increased for the entire population studied (mean value before treatment 47 4 vs. 50.4 mg/dL after). The 8 wk intake of the formula lowered the Coronary Heart Disease (CHD calculated as total cholesterol/HDL ratio) risk index significantly for the entire sample studied. The risk index decreased from a mean value of 0.99 (Cl: 0.87-1.13) to a mean of 0.90 (Cl: 0.76-1.04). No side effects of the regimen, subjective or objective, were reported.

L16 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1977:517767 CAPLUS
DN 87:117767
TI **Hydroxycitric** acid derivatives
IN Guthrie, Robert William; Kierstead, Richard Wightman
PA Hoffmann-La Roche, Inc., USA
SO U.S., 9 pp. Division of U.S. 3,919,254.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4028397	A	19770607	US 1975-600995	19750801
	US 3767678	A	19731023	US 1971-204288	19711202
	US 3919254	A	19751111	US 1973-376478	19730705
	AT 7501597	A	19750915	AT 1975-1597	19750228
	AT 330140	B	19760610		
PRAI	US 1971-204288		19711202		
	US 1973-376478		19730705		
	AT 1972-10240		19721201		

GI

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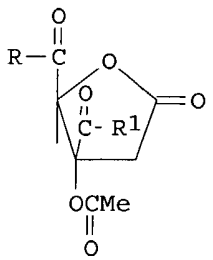

I, R=R^2, R^1=R^3

II, R=R^3, R^1=R^2

AB The title amides and esters I (R2 = MeO, EtO, PhCH2O, R3 = NH2, EtNH, Et2N, 1-adamantylamino, Oh) and II (R2 = OH, MeO, EtO, R3 = EtNH, Et2H, 4-HO2CC6H4NH) were prepared and showed an inhibiting effect in fatty acid synthesis. Thus, 28.0 g (+)-threo-**hydroxycitric** acid γ-lactone was treated with Ac2O to give 26.1 g 2(S),3(S)-tetrahydro-3-acetoxy-5-oxo-2,3-furandicarboxylic anhydride. This anhydride (9.8 g) was treated with 16.8 g 1-adamantanamine in THF to give 17.7 g I (R2 = 1-adamantylamino, R3 = OH). This amide (1.0 g) and (COCl)2 gave 0.575 g of Et 3(S),4(S)-4-[N-(1-adamantylcarbamoyl)]-3-ethoxycarbonyl-3,4-dihydroxybutanoate (III).

L16 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1976:59165 CAPLUS
DN 84:59165
TI **Hydroxycitric** acid derivatives
IN Guthrie, Robert W.; Kierstead, Richard W.
PA Hoffmann-La Roche, Inc., USA
SO U.S., 10 pp. Division of U.S. 3,767,678.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3919254	A	19751111	US 1973-376478	19730705
	US 3767678	A	19731023	US 1971-204288	19711202
	ZA 7208402	A	19730725	ZA 1972-8402	19721127
	NL 7216120	A	19730605	NL 1972-16120	19721128
	FR 2162012	A1	19730713	FR 1972-42206	19721128
	AU 7249361	A1	19740530	AU 1972-49361	19721128
	JP 48062720	A2	19730901	JP 1972-119466	19721130
	CA 994336	A1	19760803	CA 1972-157883	19721130
	BE 792180	A1	19730601	BE 1972-124833	19721201
	GB 1374347	A	19741120	GB 1972-55608	19721201
	AT 7210240	A	19750815	AT 1972-10240	19721201
	AT 329531	B	19760510		
	ES 409191	A1	19760101	ES 1972-409191	19721201
	AT 7501597	A	19750915	AT 1975-1597	19750228
	AT 330140	B	19760610		
	US 3993667	A	19761123	US 1975-600996	19750801
	US 3993668	A	19761123	US 1975-600997	19750801
	US 3994927	A	19761130	US 1975-601245	19750801
	US 4005086	A	19770125	US 1975-601065	19750801
	US 4006166	A	19770201	US 1975-601678	19750801
	US 4007208	A	19770208	US 1975-601246	19750801
	US 4028397	A	19770607	US 1975-600995	19750801
PRAI	US 1971-204288		19711202		
	AT 1972-10240		19721201		
	US 1973-376478		19730705		

GI For diagram(s), see printed CA Issue.

10803986

TI Isolation and properties of **hydroxycitric** acid
AU Lewis, Yohan Srimanth
CS Cent. Food Technol. Res. Inst., Mysore, India
SO Methods in Enzymology (1969), 13, 613-19
CODEN: MENZAU; ISSN: 0076-6879
DT Journal
LA English
AB **Hydroxycitric** acid (1,2-dihydroxypropane-1,2,3-tricarboxylic acid) can exist as 4 isomers. The acid as a lactone is isolated from the dried fruit rinds of **Garcinia** cambogia by formation of the K+ **salt** or by extraction with acetone. An isomer is extracted from the calyxes of Hibiscus sabdariffa by acetone extraction The lactones and acids are hygroscopic, and soluble in water and alc. The melting point of one lactone is 183°, that of another 178°.

L10 ANSWER 26 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1969:475298 CAPLUS
DN 71:75298
TI Absolute configurations of the naturally occurring **hydroxycitric** acids
AU Glusker, Jenny P.; Minkin, Jean A.; Casciato, Carol A.; Soule, Frederic B.
CS Inst. for Cancer Res., Philadelphia, PA, USA
SO Archives of Biochemistry and Biophysics (1969), 132(2), 573-5
CODEN: ABBIA4; ISSN: 0003-9861
DT Journal
LA English
AB Since there are 2 asymmetric C atoms in the **hydroxycitric** acid mols., there are 4 isomers, and a determination of the absolute configurations of the 2 crystalline compds. would define the configurations of all 4 isomers. The determination of the absolute configurations of the 2 lactones was made by x-ray crystallography. The structure of each lactone Ca **salt** was found by an anal. of its Patterson map by vector superposition methods. Intensity measurements showed that "**garcinia** acid," the lactone of (-)-**hydroxycitric** acid, is (2S, 3S)-2-**hydroxycitric** acid 2,5-lactone, and that "hibiscus acid," the lactone of (+)-allohydroxycitric acid, is (2S, 3R)-2-**hydroxycitric** acid 2,5-lactone. (-)-Hydroxycitrate has an analogous configuration to that predicted for the isomer of monofluorocitric acid, which is a powerful inhibitor of aconitase (D. W. Fanshier, et al., 1964). The fact that the (-)-hydroxycitrate is isolated from a plant used for food suggests that this is not the powerful inhibitor that its fluoro analog is.

=> s l10 and double
425171 DOUBLE
L11 4 L10 AND DOUBLE

=> d 1-4 l11

L11 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:542787 CAPLUS
TI Safety assessment of (-)-**hydroxycitric** acid and Super CitriMax a novel calcium/potassium **salt**
AU Soni, M. G.; Burdock, G. A.; Preuss, H. G.; Stohs, S. J.; Ohia, S. E.; Bagchi, D.
CS Burdock Group, Vero Beach, FL, 32962, USA
SO Food and Chemical Toxicology (2004), 42(9), 1513-1529
CODEN: FCTOD7; ISSN: 0278-6915
PB Elsevier Science B.V.
DT Journal

10803986

LA English
RE.CNT 87 THERE ARE 87 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:78695 CAPLUS
DN 140:264206
TI Efficacy of a novel, natural extract of (-)-**hydroxycitric** acid (HCA-SX) and a combination of HCA-SX, niacin-bound chromium and Gymnema sylvestre extract in weight management in human volunteers: a pilot study
AU Preuss, Harry G.; Bagchi, Debasis; Bagchi, Manashi; Rao, C. V. Sanyasi; Satyanarayana, S.; Dey, Dipak K.
CS Dept. of Physiology and Biophysics, Georgetown University Medical Center, Washington, DC, 20057, USA
SO Nutrition Research (New York, NY, United States) (2004), 24(1), 45-58
CODEN: NTRSDC; ISSN: 0271-5317
PB Elsevier Science Inc.
DT Journal
LA English
RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:875764 CAPLUS
DN 134:28742
TI Soluble **double** metal **salt** of group IA and IIA of (-)-**hydroxycitric** acid, process of preparing the same and its use in beverages and other food products without effecting their flavor and properties
IN Balasubramanyam, Karanam; Chandrasekhar, Bhaskaran; Ramadoss, Candadai Seshadri; Rao, Pillarisetti Venkata Subba
PA Vittal Mallya Scientific Research Foundation, India
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6160172	A	20001212	US 1998-59354	19980414
	IN 182487	A	19990417	IN 1997-MA1880	19970827
	IN 182488	A	19990417	IN 1997-MA1881	19970827
	IN 182489	A	19990417	IN 1997-MA1985	19970908
	IN 182490	A	19990417	IN 1997-MA1986	19970908
	IN 182810	A	19990724	IN 1997-MA1987	19970908
	IN 183849	A	20000429	IN 1998-MA2416	19981028
	US 6395296	B1	20020528	US 2000-637085	20000811
PRAI	IN 1997-MA1880	A	19970827		
	IN 1997-MA1881	A	19970827		
	IN 1997-MA1985	A	19970908		
	IN 1997-MA1986	A	19970908		
	IN 1997-MA1987	A	19970908		
	US 1998-59354	A3	19980414		

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:592686 CAPLUS
DN 133:176525
TI Soluble **double** metal **salt** of group IA and IIA of (-)**hydroxycitric** acid for food products
IN Subbarao, Pillarisetti Venkata; Balasubramanyam, Karnam; Chandrashekar,

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AB Eleven furancarboxylates I (R = Ac, R1 = MeO, EtO, NHEt, NEt2, CH2Ph, 1-adamantylamino; R2 = NH2, OH, MeO, EtO, NHEt, NEt2, p-HO2CC6H4NH), the Et2NH **salt** of I (R = Ac, R1 = CH2Ph, R2 = OH), and Et 3(S),4(S)-4-(1-adamantylcarbamoyl)-3-(ethoxycarbonyl)-3,4-dihydroxybutanoate, useful in the treatment of **obesity** and lipid abnormalities, were prepared by treatment of I (R = H, R1 = R2 = OH) with Ac2O, treatment of the anhydride II with amines to give carbamoyl acids I (R1 = substituted amino, R2 = OH) or with MeOH or EtOH to give half-esters I (R = Ac, R1 = MeO, EtO, R2 = CO2H), which were converted with (ClOC)2 to the acid chlorides and treated with EtOH or amines to give I (R = Ac; R1 = MeO, EtO; R2 = EtO, substituted amino). I (R = Ac, R1 = 1-adamantylamino, R2 = OH) was refluxed with (ClOC)2 in EtOH 1 hr and kept overnight at room temperature to give the butanoate. The compds. of the invention gave 16-67% inhibition of lipogenesis in rats.